



# SURVEY PAPER ON ADVANCE ATTENDANCE SYSTEM

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## ABSTRACT

"Attendance System" is an attendance calculation system of an employee. The currently available finger print technology Attendance System has several drawbacks. Attendance system which currently exists still has weaknesses. The first one is about the long queue in front of the attendance machine at the time of coming to work and leaving from work. The second one is about cheating; employees can ask her/his friend to do attendance process. The third, mostly attendance system has not been connected with the payment system in human resources software or in the finance department. The fourth disadvantage is related to Employees who work outside the office cannot do attendance process. An Attendance Monitoring System (AMS) based on and GPS using a smartphone integrated with payment system that will eliminate all the above problems mentioned. There will not be a queue for the attendance in front of attendance machine. Friends cannot put proxy attendance. For this proposed system we are predicting that all the smart phones will have fingerprint scanned in next three years.

**KEYWORDS:** GPS, AMS, Android Application, Fingerprint.

## I. INTRODUCTION

We are introducing an attendance system using fingerprint scanner and GPS (Global Positioning System) on smartphone or mobile devices [1]. The existing fingerprint attendance system is a biometric attendance algorithm that uses fingerprint detection method. This biometric fingerprint attendance system was introduced and used since 1997.

Inventors and creators of this technology realize that every human have different fingerprint gesture [3]. In fact, even identical twins have different shapes of fingerprints. This is the idea of integrating the fingerprint into attendance machine. But they are not aware of the drawback of long queue in front of machine.

Attendance system has been known since ancient time. In the beginning, attendance system using only paper and performed manually by calling the name of an existing name listed and marked as present or not present along with the notes. This way is not efficient, it would be very time consuming process.

The first attendance machine was very simple, the employees just inserting the attendance paper or called timesheet into the machine, and the time will be printed on the timesheet. Basically, this attendance machine consists of a manual card slot or hole to insert the timesheet employees and an analogue clock showing the current time. The time when the employee inserts the card into the slot is what will be printed on the timesheet. This machine also has several drawbacks. The second generation of attendance system is digital attendance machine which is the attendance machine that uses a digital method to record employees' attendance and this system was introduced in 1970. In general, digital attendance machine has a few buttons consisting of numbers and alphabets and a digital display that shows the time or the text to be displayed. Along with the machine, there are number and alphabet keys to allow employees to enter a password. Cheating employees are still likely to occur in the use of digital attendance machine because they may share the PIN with friends to do attendance. And also still there is a long queue.

Lately, it appears attendance machine that using biometric. The biometric attendance is machine attendance machine that uses biometrics to authenticate employees when the doing the attendance process. It is attendance machine that is most commonly used now a day [2].

## II. RELATED WORK

In this section study of relative technologies has been done. For example, Attendance Management uses username and passwords for authentication. The HR authenticates the user based on username, password and personal information. If user forgets the password; he/she will not be able to access the system [2]. Some attendance systems are based on RFID technology [4,9]. RFID based systems have the drawback that employee have to carry RFID cards. Management also has to carry RFID detectors. Geolocationing [5] is the first way to provide location based service. The widely used location technologies are like Global Positioning System (GPS) [1], Wi-Fi [7], Cellular Network [4] and Radio Frequency Identification (RFID). Engineers worked on these technologies for improving the services related to accuracy and environmental effects. Locating accuracy can

also be improved by combining two or more location technologies.

## III. LITURATURE SURVEY

### Attendance System on Android Smartphone

Attendance system which is currently exists still has weaknesses. The first is the long queues in front of the attendance machine at the time to come to work and leave work. The second is cheating, employees can ask her/his friend to do attendance process. The third is mostly attendance system has not been connected with the payment system in human resources software or in the finance department. The fourth, employees who work outside the office cannot do attendance process. In this paper, we introduced an attendance system based finger print technology and GPS using a smartphone integrated with payment system that will eliminate all the problems above. Our research also based on prediction that in the next few years all the smart phone will have a fingerprint scanner [1].

Android Application for Attendance Monitoring System Using Biometric Overview and Survey Managing the attendance of employees during work is a difficult task, because the process of putting attendance and maintaining the data is not automated and manual computation and calculation produces errors and wastes a lot of time. Standing in front of the fingerprint scanner is a task and also the employees who work outside the office cannot mark their attendance. The expansion of AMS using android is proposed so that employees can mark attendance through smart phone. Higher authority (HR manager) can directly access the reports and monitor the system on their personal mobile from anywhere. The system supposed to improve the accuracy as compared to old attendance systems. Moreover, the proposed technique provides it will easily provide on way for generating reports, sending leave request, marking attendance based on Global Position System (GPS) plus fingerprint [2].

### Efficiency Optimization of Attendance System with GPS and Biometric Method Using Mobile Devices

In this paper, it is proposed the Attendance system using one own device. The finger print scanner and Global Position System (GPS) are used as input for the system that integrated with HR management tools. Using our proposed methodology, the employee can mark presence using their mobile devices and the do not need to be standing and the employees who work outside the office also can mark their presence [3].

### A Location Based Time and Attendance System

Attendance system enables an HR manager to have full control of all employees working hours. It helps to manage employee's salary calculation by reducing complications. Manual processes are also eliminated as the employee needed to maintain them. Every Organization has a specific geographical location, which is determined by the GPS (Global Positioning System). The location of an employee can be determined by GPS devices like Mobile Phone, GPS watch or GPS enabled device etc. If the location of an employee and an organization is approximately same, then it should mark as present. This paper use location as a proof of attendance [5].

### A Smart, Location Based Time and Attendance Tracking System Using Android Application

We have proposed a smart location based attendance system which is implemented on android mobile application reducing the need of additional biometric scanner. The location of an organization has a specific physical and geographical location, which can be identified by the GPS. Each employee's location can be identified by the GPS installed in their individual smartphone. This location is defined as a key of time and attendance tracking [8].

#### Access Control Based on Location and Time

This system authenticates authorized user but also time and location of the authorized user in both way i.e. through GSM & GPS [6]. Managing attendance of employees with time and location constraint to avoid proxy attendance. This helps in calculating the salary based on the time constraint. It will help on recognizing extra time period the employee worked at a particular location. It uses the concept of GPS/GSM. Location-based authentication has the effect of physical locations of network entities can be reliably determined [10].

#### IV. PROPOSED SYSTEM

##### Problem Statement:

The proposed system introduces an attendance system using fingerprint scanner and GPS (Global Positioning System) on android smartphone [5]. The proposed system overcomes all the drawbacks of the existing system like location, time and queue concept.



Fig. 1. Basic Block Diagram of Attendance System

#### V. SYSTEM ARCHITECTURE

The schematic diagram of our attendance system on android smartphone using GPS and fingerprint is shown in Fig. 2. The smartphone is built-in with a GPS receiver, which can receive signals from GPS satellites [1].

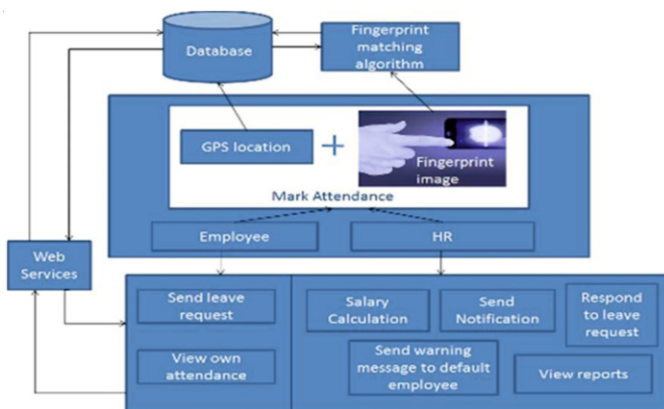


Fig. 2. System Architecture of Attendance System

Using this application employee can register for their organization. After successful sign up, employee needs to scan his/her fingerprint and adding GPS location to the database. Database will compare for same fingerprint by using fingerprint matching algorithm. If it finds the fingerprint matches and the location is correct, the attendance of employee is marked as present. Employee can also request for the leaves based on type of leave. He/she can view his own attendance of the month.

HR can respond to leave requested by the employee. HR has the functionalities like salary calculation, send notification, sending warning message to defaulter employee and can view reports.

#### VI. CONCLUSION

Most of the drawbacks of the attendance system has already overcome in previous developed application which are currently in industries, hospitals, colleges etc. The proposed system overcomes the main drawback of existing system. The

proposed system will be developed in Android Studio and tested on Android emulator or Lenovo Vibe K4 Note.

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